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TRANSMITTAL OF APPEAL BRIEF (Large Entity)

Docket No.
T36-156717M/AIO

In re Application Of: **Hideaki KATO, et al.**

Application No. 10/615,340	Filing Date July 9, 2003	Examiner Chuc Tran	Customer No. 21254	Group Art Unit 2821	Confirmation No. 8712

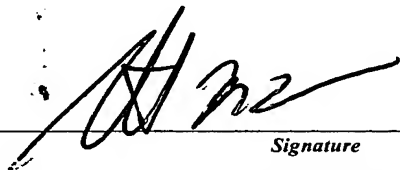Invention: **METHOD AND APPARATUS FOR ARRANGING LIGHT-EMITTING DIODES AND LIGHT-EMITTING ELEMENTS**

COMMISSIONER FOR PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on
August 18, 2005

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Dated: **October 6, 2005**

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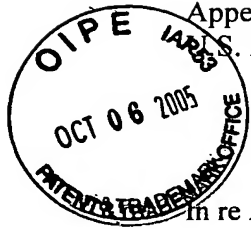
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of

Hideaki Kato et al.

Serial No.: 10/615,340   Group Art Unit: 2821

Filed: July 9, 2003   Examiner: Chuc Tran

For: METHOD AND APPARATUS FOR ARRANGING LIGHT-EMITTING DIODES
AND LIGHT-EMITTING ELEMENTS

<u>**APPELLANTS' BRIEF ON APPEAL**</u>

Honorable Commissioner of Patents
Alexandria, Virginia 22313-1450
Box AF

Sir:

Appellants respectfully appeal the final rejection of claims 1-19 in the Final Office

Action dated May 18, 2005. A Notice of Appeal was timely filed on August 18, 2005.

I.   REAL PARTY IN INTEREST

The real party in interest is Toyoda Gosei Co., Ltd., assignee of 100% interest of the

above-referenced patent application.

II.   RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellants, Appellants' legal

representative or Assignee, which would directly affect or be directly affected by or have a

bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1-19, all of the claims in the Application, are set forth fully in the attached Appendix.

Claims 1-19 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Vazan (U.S. Patent No. 6,753,897).

Appellant respectfully appeals the rejections of <u>claims 1-19</u> under 35 U.S.C. § 102(e) as being anticipated by Vazan, <u>which is the sole issue in this Appeal</u>.

IV. STATUS OF AMENDMENTS

An Amendment under 37 C.F.R. § 1.116 was filed on July 8, 2005, editorially amending claim 17. In an Advisory Action mailed August 9, 2005, the Examiner did <u>not</u> indicate that the Amendment under 37 C.F.R. § 1.116 filed on July 8, 2005 would not be entered on Appeal. Therefore, since the Amendment filed under 37 C.F.R. § 1.116 on July 8, 2005 did not raise new issues that would require further consideration and/or search, Appellants understand that the Amendment filed on July 8, 2005 <u>would be entered</u> on Appeal. The Examiner stated that claims 1-19 were unpatentable.

A Notice of Appeal was timely filed on August 18, 2005.

Therefore, the claims are pending as set forth in the Appendix, assuming entry of the Amendment filed on July 8, 2005.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The claimed invention (e.g., as defined in claim 1, and similarly defined in claim 5) is directed to a method of arranging a number of LEDs. The method includes storing

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characteristic values of each of the LEDs measured in a characteristic measurement, temporarily keeping the LEDs after storing the characteristic values, and <u>rearranging the LEDs to make the characteristic values of adjacent LEDs substantially equal</u>.

The claimed invention (e.g., as defined in claim 16) is directed to an apparatus for arranging a number of LEDs. The apparatus includes a characteristic value measuring unit that performs a characteristic measurement on the LEDs to obtain a characteristic value for the LEDs, an arrangement sequence calculation unit that generates an arrangement sequence of the LEDs such that a difference between the characteristic value of adjacent LEDs is minimized, and <u>a rearrangement unit for rearranging the LEDs in accordance with the arrangement sequence</u>.

The non-obvious and unique combination of features provides a method of arranging LEDs that allows adjacent LEDs to emit light <u>in a uniform manner</u> without variation (see Application at page 4, lines 1-5). The adjacent LEDs can emit light <u>in a uniform manner</u> without variation because the LEDs are arranged to make the characteristic values of adjacent LEDs substantially equal (see Application at page 4, lines 1-5).

Referring to the exemplary embodiments of the invention depicted in Figures 1-5, a method of arranging a number of light-emitting diodes (LEDs) includes storing characteristic values of each of said LEDs measured in a characteristic measurement (e.g., see Application at page 12, lines 5-7 and page 14, lines 5-19), temporarily keeping the LEDs after storing the characteristic values (e.g., see Application at page 12, lines 7-9 and page 14, lines 5-19) and rearranging the LEDs to make the characteristic values of adjacent LEDs substantially equal (e.g., see Application at page 12, lines 9-15 and page 14, lines 5-19).

Referring to the exemplary embodiment of the invention depicted in Figure 3, an

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apparatus (i.e., 20) is used for arranging a number of LEDs (i.e., 8). The apparatus (20) includes a characteristic value measuring unit (i.e., 24; see Application at page 16, lines 13-14) that performs a characteristic measurement on the LEDs to obtain a characteristic value for the LEDs, an arrangement sequence calculation unit (i.e., 27; see Application at page 17, lines 6-8) that generates an arrangement sequence of the LEDs such that a difference between the characteristic value of adjacent LEDs is minimized, and <u>a rearrangement unit</u> (i.e., 28; see Application at page17, lines 20-21) <u>for rearranging the LEDs in accordance with the arrangement sequence</u>.

As mentioned above, the non-obvious and unique combination of features provides a method of arranging LEDs that allows adjacent LEDs to emit light <u>in a uniform manner</u> without variation (see Application at page 4, lines 1-5). The adjacent LEDs can emit light <u>in a uniform manner</u> without variation because the LEDs are arranged to make the characteristic values of adjacent LEDs substantially equal (see Application at page 4, lines 1-5).

Each of the features recited in dependent claims 2-4, 6-15 and 17-19 is described in detail in the Specification (e.g., see Application at pages 11-27) and Figures 1-5 of the Application.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The sole issue presented for review by the Board of Patent Appeals and Interferences is whether claims independent claims 1, 5 and 16 and dependent claims 2-4, 6-15 and 17-19 are anticipated under 35 U.S.C. § 102(e) by Vazan.

VII.   ARGUMENT

A.   THE EXAMINER'S POSITION

In the Final Office Action mailed May 18, 2005, the Examiner rejected claims 1-19 under 35 U.S.C. § 102(e) as being anticipated by Vazan.

The Examiner alleged that *"[r]egarding claim 1, Vazan discloses a method of arranging a required number of LEDs, comprising: - storing characteristic values of each of said LEDs (Col.6, line7) measured in characteristic measurement (Col. 6, line 13); - temporarily keeping said LEDs after storing said characteristic values (Col. 3, Line 60); and - rearranging said LEDs to make said characteristic values of each adjacent LEDs substantially equal (Col. 6, Line 15) (Col. 4, Line 3)* " (see Office Action mailed May 18, 2005, at pages 2-3, numbered paragraph 3). Furthermore, the Examiner alleged that *"[t]he patent by Vazan clearly teach rearranging the LEDS to make the characteristic values of adjacent LEDs substantially equal See (Col. 3, Line 56)"*.

In the Advisory Action mailed August 9, 2005, the Examiner alleged that *"Vazan clearly teach in Fig. 4 a comparator (48) rearranging the LEDs into the correction memory (41) (Col. 4, Line 29) and the LED printbar Control Circuit (22) to make the characteristic values of adjacent LEDs substantially equal See (Col. 3, Line 63) (Col. 6, Line 45) (Col. 1, Line 10) and (Abstract)"* (see Advisory Action mailed August 9, 2005).

B.   APPELLANTS' POSITION

To summarize, Appellants submit that the Examiner's position is flawed as a matter of fact and law. Thus, claims 1-19 are not anticipated by Vazan.

i)   **Independent claims 1, 5 and 16 (as well as claims 2-4, 6-15 and 17-19 which depend from claim 1) are not anticipated by Vazan under 35 U.S.C. § 102(e).**

1.   **INDEPENDENT CLAIMS 1, 5 AND 16**

a.   **The Examiner's Position is Flawed as a Matter of Fact and Law.**

The Examiner alleged that Vazan teaches the claimed invention of claims 1-19. Appellants submit, however, that there are elements of the claimed invention, which are neither taught nor suggested by Vazan.

In the Office Action mailed May 18, 2005, the Examiner alleged that "[r]egarding claim 1, Vazan discloses a method of arranging a required number of LEDs, comprising: - storing characteristic values of each of said LEDs (Col.6, line7) measured in characteristic measurement (Col. 6, line 13); - temporarily keeping said LEDs after storing said characteristic values (Col. 3, Line 60); and - rearranging said LEDs to make said characteristic values of each adjacent LEDs substantially equal (Col. 6, Line 15) (Col. 4, Line 3) " (see Office Action mailed May 18, 2005, at pages 2-3, numbered paragraph 3). Furthermore, the Examiner alleged that "[t]he patent by Vazan clearly teach rearranging the LEDS to make the characteristic values of adjacent LEDs substantially equal See (Col. 3, Line 56)".

Appellants respectfully submit that the Examiner's position is flawed as a matter of fact and law and that the Examiner has <u>mischaracterized the features of Vazan</u>.

To anticipate a claim the reference must show <u>each and every element of the claims, in as complete detail as in the claim</u>. That is, "[t]he <u>identical invention</u> must be shown in as

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complete detail as is contained in the ...claim" (see <u>Richardson v. Suzuki Motor Co.,</u> 868

F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); *emphasis added*; see also M.P.E.P.

§ 2131). The <u>elements also must be arranged as required by the claim</u> (e.g., see <u>In re Bond,</u>

910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Thus, <u>not only</u> must each and every element of the claims be taught, but <u>the claimed</u>

<u>arrangement</u> of the elements (i.e., the <u>claimed relationships between</u> the elements) <u>also must</u>

<u>be taught</u> by the reference. It is not enough merely to cite a "laundry list" of elements

without regard for how those elements relate to one another or how those elements actually

are arranged in the reference.

Vazan teaches normalizing the properties (e.g., output) of the LEDs by using an offset

value stored in a memory, so that the LEDs emit light uniformly. The <u>current input</u> to the

LEDs is adjusted. The <u>position</u> of the LEDs, however, <u>remains constant</u>. That is, the

position of the LEDs is <u>not</u> rearranged.

In contrast, in the claimed invention, the properties (e.g., output) of the LEDs are <u>not</u>

necessarily normalized. However, the LEDs may be <u>rearranged</u> in a suitable manner based

on the different properties of the LEDs. The <u>physical position</u> of the LEDs is adjusted or

<u>rearranged</u>.

That is, Vazan does not teach or suggest "*rearranging said LEDs to make said*

characteristic values of adjacent LEDs substantially equal" (emphasis added by Applicants),

as recited in claim 1 (and similarly recited in claims 5 and 16).

The Examiner attempts to rely on column 6, line 15 and column 4, line 3 of Vazan as

teaching rearranging the LEDs to make the characteristic values of each adjacent LEDs

substantially equal. The Examiner, however, is clearly incorrect.

That is, nowhere in these passages (nor anywhere else for that matter) does Vazan teach or suggest **rearranging the LEDs to make the characteristic values of adjacent LEDs substantially equal**. Indeed, Vazan does <u>not</u> even mention <u>rearranging</u> the LEDs, let alone teach or suggest the limitation recited in the claimed invention. Vazan merely teaches <u>adjusting the **output**</u> of the LEDs.

Appellants point out that the Examiner <u>must</u> consider the plain meaning of the language of the claims as well as the <u>plain meaning</u> of the language of the <u>prior art reference</u>. That is, the Examiner's latitude to provide a reasonably broad interpretation to Appellants' claim language does <u>not</u> extend to the <u>prior art</u>.

The M.P.E.P. sets forth that "[w]hile the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow". "This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification" (see M.P.E.P. § 2111.01). Furthermore, "[o]rdinary, simple English words whose meaning is clear and unquestionable, absent any indication that their use in a particular context changes their meaning, are construed to mean <u>exactly what they say</u>" (see M.P.E.P. § 2111.01) (emphasis added by Appellants).

Moreover, "[c]laim terms are presumed to have the ordinary and customary meanings attributed to them by those of ordinary skill in the art". "It is the use of the words in the context of the written description and customarily by those skilled in the relevant art that accurately reflects both the 'ordinary' and the 'customary' meaning of the claims" (see M.P.E.P. § 2111.01).

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In this instance, the term "rearranging" recited in claim 1 (and similarly recited in claims 5 and 16) is an "ordinary, simple English" word whose meaning is "clear and unquestionable". Applicants point out that the Compact Oxford English Dictionary defines the term rearrange as "to arrange again in a different way". The Compact Oxford English Dictionary defines the term arrange as "to put tidy or in a particular order". Similarly, the Encarta World English Dictionary defines the term rearrange as "to change the order or position of something". Therefore, the claimed invention of exemplary claim 1 may include changing (e.g., physically changing) the order or position of the LEDs.

This common, "clear and unquestionable" definition of the term "rearranging" is supported by the language of the Specification. For example, as shown in the exemplary aspect of Figure 1, the LEDs 1a, 1b, 1c and 1d are physically rearranged so that the light intensity values of adjacent LEDs are substantially equal (e.g., see Application at page 12, line 5 through page 13, line 8).

Furthermore, the Specification teaches that light emitting elements (8) may be arranged successively on a temporary palette (25), while temporarily numbered (1), (2), (3), (4), etc. Measured light intensity (26) may be input to a computer system (27) in association with the temporary numbers (1), (2), (3), (4), etc. The LEDs (based on their measured light intensity data (26)) may be rearranged according to a predetermined algorithm to make the light intensity values of adjacent light-emitting elements (8) substantially equal (see Application at Figure 3, and page 16 line 6 through page 17, line 8).

A moving arrangement unit (28) may place each of the LEDs on a taping (30). The LEDs may be rearranged on the taping (30) in accordance with the sequence generated by the

computer (27). Therefore, the moving arrangement unit (28) rearranges the physical position of the LEDs (see Application at Figure 3, and page 17, lines 9-23).

Therefore, it is clear, from the ordinary meaning as well as that provided in the specification, that the term "rearranging" refers to altering the physical arrangement or position of the LEDs.

Vazan, however, does not teach or suggest changing the order or position of the LEDs.

In stark contrast, Vazan clearly describes a current sensing method to provide uniform output power from the LED printbar using sets of correction values to compensate for the loss of output power from the LEDs (see Vazan at column 4, lines 40-45). Vazan teaches that the correction values are used to normalize the intensity of the LEDs' output (see Vazan at column 3, lines 50-60). Vazan does not, however, teach or suggest rearranging the LEDs.

In the Examiner's Response to Arguments section of the Office Action dated May 18, 2005, the Examiner alleges that Vazan teaches rearranging the LEDs to make the characteristic values of adjacent LEDs substantially equal (see Office Action dated May 18, 2005 at page 2, numbered paragraph 1). The Examiner attempts to rely on column 3, line 56 of Vazan to support this allegation. The Examiner, however, is clearly incorrect.

This passage of Vazan merely teaches "a first set of correction data to normalize the light output of each LED is determined and stored in a correction memory"(emphasis added by Applicants) (see Vazan at column 3, line 56). Again, Vazan merely teaches to normalize the light output of each LED. Vazan does not teach rearranging the LEDs. As indicated above, the Examiner must consider the plain meaning of the language of the prior art reference.

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Indeed, nowhere does Vazan teach or suggest that normalizing the output of the LEDs is equivalent to <u>rearranging or changing the order or position of the LEDs</u>, as in the claimed invention.

Furthermore, in the Examiner's Response to Arguments section, the Examiner alleges that "Applicants also argue that Vazan does not teach the arrangement of the LEDs in the printbar" (see Office Action dated May 17, 2005 at page 2). Applicants submit that the Examiner has clearly misunderstood Applicants' arguments.

That is, in the Amendment filed on February 28, 2005, Applicants clearly stated that "Vazan does <u>not</u> teach <u>altering</u> the arrangement of the LEDs in the printbar" (emphasis added by Applicants) (see Amendment filed February 28, 2005 at page 8). This feature is not taught or suggested by Vazan. That is, the arrangement of the LEDs in Vazan clearly <u>remains constant</u>.

Furthermore, in the Advisory Action dated August 9, 2005 the Examiner asserted that "Vazan clearly teach in Fig. 4 a comparator (48) rearranging the LEDs into the correction memory (41) (Col. 4, Line 29) and the LED printbar Control Circuit (22) to make the characteristic values of adjacent LEDs substantially equal See (Col. 3, Line 63) (Col. 6, Line 45) (Col. 1, Line 10) and (Abstract)". Appellants respectfully submit that the Examiner has again mischaracterized the teachings of Vazan.

That is, the Examiner appears to be alleging that the claimed invention and the method of Vazan both result in the LEDs having a substantially equal output, and therefore, the claimed invention is anticipated by Vazan. This assertion, however, is clearly incorrect.

Indeed, as indicated above, in order for Vazan to anticipate the claimed invention Vazan <u>must</u> show <u>each and every element of the claims,</u> in as complete detail as in the claim.

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Vazan merely teaches, as explained above, that measured light output data is input to a comparator (48), which compares the auxiliary LED output power data with desired uniform power output. As the auxiliary LEDs measured values change with aging, the comparator (48) will signal the correction memory (41) to load a set of correction values into the LED printbar control circuit (22) to compensate for the loss of output power from the LEDs (see Vazan at column 4, lines 27-45). The correction memory (41) contains sets of stored correction values for increasing various power levels so that the LEDs, as they age, output the same light intensity (see Vazan at column 4, lines 3-6). However, these passages of Vazan do not even mention rearranging the LEDs, let alone teach or suggest the limitations recited in exemplary claim 1.

Moreover, Vazan does not disclose, suggest, or even contemplate the problems addressed by the claimed invention, or for that matter, the advantages obtained by the novel and unobvious structural elements of the claimed invention.

For at least the foregoing reasons, Appellants respectfully submit that, as a matter of fact, the Examiner has mischaracterized the features of the Vazan device. Moreover, Vazan clearly does not anticipate, or render obvious, all of the features of the claimed invention, as a matter of law.

Therefore, the claimed invention of independent claims 1, 5 and 16 (as well as dependent claims 2-4, 6-15 and 17-19 which depend from claims 1, 5 and 16 respectively) is not anticipated by Vazan.

Therefore, Appellants respectfully submit that the Examiner's position is clearly unreasonable.

2. DEPENDENT CLAIMS 2-4, 6-15 and 17-19

a. The Examiner's Position is Flawed as a Matter of Fact and Law.

1. <u>Claims 2 and 6</u>:   Claim 2 depends from claim 1 (and similarly claim 6, which depends from claim 2) and recites "*wherein said adjacent LEDs are arranged so that the characteristic value of one LED is not larger than that of another LED*" (see Application at page 6, lines 3-7). This feature is not taught or suggested by Vazan.

2. <u>Claims 3 and 7</u>: Claim 3 depends from claim 1 (and similarly claim 7, which depends from claim 5) and recites "*wherein a predetermined number of LEDs are rearranged to make said characteristic values of adjacent LEDs substantially equal, after said LEDs are measured and temporarily kept*" (see Application at page 12, lines 9-11). This feature is not taught or suggested by Vazan.

3. <u>Claims 10 and 11</u>: Claim 10 depends from claim 1 (and similarly claim 11, depends from claim 5) and recites "*wherein said LEDs are arranged beginning with an LED having a smallest characteristic value of said LEDs to an LED having a largest characteristic value of said LEDs*" (see Application at page 4, lines 13-19). This feature is not taught or suggested by Vazan.

Regarding dependent claims 10 and 11, the Examiner alleges that Vazan discloses that the LEDs are arranged beginning with an LED having a smallest characteristic value of the LEDs to an LED having a largest characteristic value (see Office Action dated May 17, 2005 at page 4). The Examiner attempts to rely on column 5, line 47 of Vazan to support this allegation.

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Appellants submit that the Examiner is clearly incorrect. That is, this passage in Vazan merely teaches that alternate LEDs are loaded "1" and "0" and are turned off and on by the exposure time of the printbar data (see Vazan at column 5, lines 46-51). Again, the Examiner has mischaracterized the plain meaning of the language of Vazan. Indeed, this passage of Vazan does not even mention arranging the LEDs, let alone teach or suggest the specific limitations of dependent claims 10 and 11.

4. <u>Claim 12</u>: Claim 12 depends from claim 1 (and similarly claim 13, which depends from claim 5) and recites "*generating an arrangement sequence on a memory of a computer to make said characteristic values of adjacent LEDs substantially equal, wherein said rearranging is conducted based on said arrangement sequence*" (see Application at page 12, lines 16-23). This feature is not taught or suggested by Vazan.

5. <u>Claim 14</u>: Claim 14 depends from claim 1 (and similarly claim 15, which recites from claim 5) and recites "*wherein said temporarily storing comprises ranking each of said LEDs with a temporary number by said characteristic value*" (see Application at page 13, lines 16-24). This feature is not taught or suggested by Vazan.

6. <u>Claim 17</u>: Claim 17 depends from claim 1 and recites "*wherein said rearranging aid LEDs comprises sorting said LEDs according to a predetermined algorithm*" (e.g., see Application at page 14, lines 13-18). This feature is not taught or suggested by Vazan.

7. <u>Claim 18</u>: Claim 18 depends from claim 1 and recites "*wherein said rearranging said LEDs comprises arranging said LEDs on a tape*" (see Application at page 17, lines 9-23 and Figure 3). This feature is not taught or suggested by Vazan.

8. <u>Claim 19</u>: Claim 19 depends from claim 1 and recites "*wherein said rearranging said LEDs comprises arranging said LEDs on a palette*" (e.g., see Application at Figure 5). This feature is not taught or suggested by Vazan.

Therefore, dependent claims 2-4, 6-15 and 17-19, like independent claims 1, 5 and 16, include at least one element, which is not taught or suggested by the cited prior art reference.

Therefore, Appellants respectfully submit that the Examiners' position is clearly unreasonable.

VIII. CONCLUSION

In view of the foregoing, Appellants submit that claims 1-19, all of the claims presently pending in the application, are patentably distinct from the prior art of record and in condition for allowance. Thus, the Board is respectfully requested to remove the rejections of claims 1-19.

Appellants' Brief on Appeal
U.S. Application Serial No. 10/615,340

Please charge any deficiencies and/or credit any overpayments necessary to enter this

paper to Attorney's Deposit Account number 50-0481.

Respectfully Submitted,

Date: October 6, 2005

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CLAIMS APPENDIX

1.   A method of arranging a number of light-emitting diodes (LEDs), comprising:

storing characteristic values of each of said LEDs measured in a characteristic

measurement;

temporarily keeping said LEDs after storing said characteristic values; and

rearranging said LEDs to make said characteristic values of adjacent LEDs

substantially equal.

2.   A method of arranging LEDs according to Claim 1, wherein said adjacent LEDs are

arranged so that the characteristic value of one LED is not larger than that of another LED.

3.   A method of arranging LEDs according to Claim 1, wherein a predetermined number

of the LEDs are rearranged to make said characteristic values of adjacent LEDs substantially

equal, after said LEDs are measured and temporarily kept.

4.   A method of arranging LEDs according to Claim 1, wherein said characteristic value

comprises a light intensity of said LEDs.

5.   A method of arranging light-emitting elements, comprising:

storing characteristic values of said light-emitting elements measured in a

characteristic measurement;

temporarily keeping said light-emitting elements after storing said characteristic values; and

rearranging said light-emitting elements to make said characteristic values of adjacent light-emitting elements substantially equal.

6.   A method of arranging light-emitting elements according to Claim 5, wherein said adjacent light-emitting elements are arranged so that the characteristic value of one light-emitting element is not larger than that of another light-emitting element.

7.   A method of arranging light-emitting elements according to Claim 5, wherein a predetermined number of the light-emitting elements are rearranged to make said characteristic values of adjacent light-emitting elements substantially equal, after said light-emitting elements are measured and temporarily kept.

8.   A method of arranging light-emitting elements according to Claim 5, wherein said characteristic value comprises a light intensity of said light-emitting elements.

9.   A method of arranging LEDs according to Claim 1, wherein said characteristic value comprises at least one of light intensity, forward voltage, wavelength and chromaticity.

10.   A method of arranging LEDs according to Claim 1, wherein said LEDs are arranged beginning with an LED having a smallest characteristic value of said LEDs to an LED having a largest characteristic value of said LEDs.

11. A method of arranging light-emitting elements according to Claim 5, wherein said light-emitting elements are arranged beginning with a light-emitting element having a smallest characteristic value of said light-emitting elements to a light-emitting element having a largest characteristic value of said light-emitting elements.

12. A method of arranging LEDs according to Claim 1, further comprising:

generating an arrangement sequence on a memory of a computer to make said characteristic values of adjacent LEDs substantially equal,

wherein said rearranging is conducted based on said arrangement sequence.

13. A method of arranging light-emitting elements according to Claim 5, further comprising:

generating an arrangement sequence on a memory of a computer to make said characteristic values of adjacent light-emitting elements substantially equal,

wherein said rearranging is conducted based on said arrangement sequence.

14. A method of arranging LEDs according to Claim 1, wherein said temporarily storing comprises ranking each of said LEDs with a temporary number by said characteristic value.

15. A method of arranging light-emitting elements according to Claim 5, wherein said temporarily storing comprises ranking said light-emitting elements with a temporary number by said characteristic value.

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16.   An apparatus for arranging a number of LEDs, comprising:

a characteristic value measuring unit that performs a characteristic measurement on the LEDs to obtain a characteristic value for the LEDs;

an arrangement sequence calculation unit that generates an arrangement sequence of the LEDs such that a difference between the characteristic value of adjacent LEDs is minimized; and

a rearrangement unit for rearranging the LEDs in accordance with said arrangement sequence.

17.   A method of arranging LEDs according to Claim 1, wherein said rearranging said LEDs comprises sorting said LEDs according to a predetermined algorithm.

18.   A method of arranging LEDs according to Claim 1, wherein said rearranging said LEDs comprises arranging said LEDs on a tape.

19.   A method of arranging LEDs according to Claim 1, wherein said rearranging said LEDs comprises arranging said LEDs on a palette.

EVIDENCE APPENDIX

Not applicable.

RELATED PROCEEDINGS APPENDIX

Not applicable.